THE INVENTION CLAIMED IS:

1. A lens system for use with a phase plate in a transmission electron microscope having an objective lens forming a back-focal plane, said transmission electron microscope producing an electron beam, said lens system comprising:

said phase plate located beyond the back-focal plane of the objective lens in an imaging system mounted downstream of the objective lens; and

lenses for imaging the back-focal plane of the objective lens onto said phase plate such that position and tilt of the electron beam relative to an optical axis are made conjugate.

2. A lens system for use with a phase plate as set forth in claim 1, wherein alignment coils are placed on opposite sides of said phase plate to align the electron beam incident on the phase plate and the electron beam leaving the phase plate, respectively.

3. A transmission electron microscope comprising:

an objective lens forming a back-focal plane;

a phase plate located beyond the back-focal plane of the objective lens in an imaging system mounted downstream of the objective lens;

imaging lenses for imaging the back-focal plane of the objective lens onto said phase plate such that position and tilt of the electron beam relative to an optical axis are made conjugate; and

an alignment coil for directing the electron beam going out of said lenses toward said phase plate.

4. The transmission electron microscope of claim 3, further including an additional alignment coil for directing the electron beam going out of said phase plate toward said imaging lenses located after said phase plate.